

Date: Fri, 28 May 93 17:29:39 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #656
To: Info-Hams

Info-Hams Digest Fri, 28 May 93 Volume 93 : Issue 656

Today's Topics:

2mtrs and airlines
Alinco DJ-580 question
Balanced feedline (was: G5RV)
DX88 vs. GAP vs. R7 etc.
FTP Sites for 2 Line Elements!
HTX-202 and pl usage
Need for Radar Gun License RE: FCC Softball Fine
Question: Can a novice take the extra test?
Radio shack 2mtr ht, DTMF tone prob
VCO design questions
What is the status of DOVE (DO-17) ?

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 28 May 93 22:35:06 GMT
From: netcomsv!vitsemi!rob@decwrl.dec.com
Subject: 2mtrs and airlines
To: info-hams@ucsd.edu

In article <9305261621.aa20764@cbda7.apgea.army.mil> wejones@cbda7.apgea.army.mil
(Bill Jones) writes:
>Not sure I understand what could happen to static ram? It loses its memory
>when power is off anyway?

Yes, it does. But is power really off?

>Don't know how NVRAM works, but assume that it
>must be something like eeproms, or perhaps ram that retains its memory via
>capacitive static charge.

NVRAM is usually works by having a battery backup. There is another way to do it using exotic compounds, but I don't think these are on the market.

>I had always assumed that freqs were
>stored in HTs using eeproms, but perhaps another technology is used, if so,
>how does it work. My wife carried her HT on a plane once, and sent it through
>the x-ray conveyer. When she tried to use it (once off the plane), it was
>totally messed up! It still had the freqs programmed in, but it was
>locked into transmit mode, yet not transmitting, could not receive anything
>on any freq (not even static if I remember what she told me correctly).
>She had to reset the rig (func on)(this was an Alinco 580), and then it
>worked OK. Anyway, it seems like the x-rays zapped something, but it seems
>like they hit something other than the freq memory, and whatever it was, it
>was restored by the reset. This sounds like they store something other
>than freq/offset/etc data in the non volatile memory for some reason?

>
Digital circuits generally have some amount of memory, e.g. RAMs, PROMs and flip-flops. These may store data or state information (as in the state of the device, not one of the states of the union).

X-rays are a type of ionizing radiation. When ionizing radiation passes through a semiconductor crystal, the atoms may become ionized along the track of the particle (x-ray in this case). If this ionization occurs in a device (transistor) where there is an electric field (there usually is) carriers (electrons and holes) are produced. These carriers can cause one of the bits of memory to change state (1->0 or 0->1).

I think that this is what happened to her HT. It went from the standby state to the transmit state, at least in the control section of the HT. A reset reset the flip-flop that had been flipped to the wrong state.

Do x-rays cause lasting harm? I am not sure. If they do, it is probably by damaging the oxide-semiconductor interface in a fashion similar to the 'hot electron' effect. This effect occurs during normal operation of a MOSFET. Current process technology reduces or eliminates this problem using a modified FET design (called LDD). I do not think that exposure to these security x-rays will cause lasting damage to your HT directly.

--

Rob Eccles KD6VYW | Disclaimer: The statements made here do not
rob@vitsemi.COM | represent my employer or anyone else.

Date: 28 May 93 19:46:34 -0500
From: usc!howland.reston.ans.net!news.cac.psu.edu!juncol.juniata.edu!
kline@network.UCSD.EDU
Subject: Alinco DJ-580 question
To: info-hams@ucsd.edu

In article <1993May24.142757.11605@rsg1.er.usgs.gov>, tbodoh@resdgs1.er.usgs.gov
(Tom Bodoh) writes:

>
> --
> I just bought an Alinco DJ-580T and am considering whether to open up the
> wide coverage receive. Does snipping the one wire simply allow the CPU
> to program the additional frequencies or does that wire enable more
> circuitry which will lead to more intermod and imaging on the 2m and 70cm
> bands? In other words - is reception going to get worse or is it as bad
> as it will get (are the RF stages for the extended receive already active
> but limited by the CPU?). Thanks...
>
> ++++++
> + Tom Bodoh - Sr. systems software engineer
> +
> + USGS/EROS Data Center, Sioux Falls, SD, USA 57198 (605) 594-6830 +
> + Internet; bodo@dgcr.usgs.gov (152.61.192.66)
> +
> + "Welcome back my friends to the show that never ends!" EL&P
> +
> ++++++
> --

Tom - I did the mod you mentioned earlier and have had no problems with
receiver sensitivity or intermod... and I used it at Dayton this year. If
I didn't notice problems there, you're not likely to notice them anywhere! :)

Barry L. Kline, NJ3N | I'm not going to allow classes to
kline@juncol.juniata.edu | interfere with my education!
CIS: 72200,3254 | -- National Unhonored Society motto
NJ3N@W3YA.#WPA.PA.USA.NA |

Date: 28 May 93 05:27:58 EDT
From: usc!howland.reston.ans.net!europa.eng.gtefsd.com!eddie.mit.edu!
news.intercon.com!psinntp!arrl.org@network.UCSD.EDU
Subject: Balanced feedline (was: G5RV)
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:

>In article <1993May27.182537.22611@news.mentorg.com> mbutts@mbutts.mentorg.com
(Mike Butts) writes:

>>

>>My question is how long to make the flattop. Zack Lau at ARRL says 86 feet
>>is a 'magic' length good for 20 meters. Gary Coffman says 105 feet is
>>a 'classic' length for a center-fed flattop. Why? I don't see the
>>wavelength relationships for either.

>

>And that's the point. If the antenna presented a resonant length on one
>band, it would present a resonance at a multiple on higher bands, and
>that would give a very high feedpoint impedance that's hard to match.
>By picking a length that's not harmonically related to the bands, the
>tuner will see an impedance more in line with it's available matching
>range. 105 feet works well for 75 meters and above. If you don't need
>75, then the 86 foot length should work at 40 and above. It will be a
>little hard to feed on 75 meters, and a bit tricky to match on 40, and
>it's efficiency won't be as good on those bands, but it'd even suffice
>for local contacts on 75.

You are right, it doesn't work all that well on 75 meters. DX for me
with 2 watts is something in the Caribbean--don't think I've even worked
a A on 75 meters. However, it seems to do OK for running checking into
80M QRP nets as far away as Michigan. Actually, the problem band is
15 meters, but I just load up a vertical hanging off a tree outside
my apartment, rather than trying to make one antenna do *everything*.

One of my favorite recommendations is a *single* band dipole (40/80 meters
for night time operating, 20 or 15 meters for daytime operation). Its
simple, doesn't require a tuner, and lets the beginner get on the
air quickly. The fancy setup can come later. Ideally, the dipole can
be used as a comparison if a new antenna seems flawed, keeping in mind
that a large number of signals have to be compared to really see which
is working better.

Interestingly, with a customized tuner its not that hard to load up
either an 86 or 66 foot wire on 160 meters to make QRP CW contacts out
to about 500 miles, though 2 way QRP CW contacts are pretty tough
unless you have someone like W3TS on the other end.

>>Also, if the feedline is balanced and I'm using a balanced tuner, does the
>>feedline length really matter, as some seem to think? Or does it only
>>matter if the feed or match is unbalanced.

>

>Yes it can matter. While the line is *balanced*, it's not *matched*
>and will have a relatively high SWR. Now that's not a problem from
>the loss standpoint, but a transmission line with an SWR other than
>1:1 acts as a transmission line *transformer* and will change the
>impedance seen by the tuner. Tuners don't have infinite matching

>range, and different feedline lengths can present impedances that
>are sufficiently different to make the difference between go and
>no go with a particular tuner.
>
>>By the way, my tuner's schematic (AEA Econotuner) shows a center-tap-
>>grounded inductor with the balanced feedline across the whole thing and the
>>single-ended connection to the rest of the tuner and rig connected to one
>>end.

I put the balun between the tuner and the rig. Thus, once the system is tuned up, the balun sees its design impedance, and not something off the wall. I cheat by running QRP, so I can use a toroidal inductor that doesn't couple much to ground, allowing an unbalanced network to be used without upsetting the balance of the system appreciably. High powered operation can be a bit much for iron powder toroids, necessitating air core inductors with large fields that couple to ground much more. I did build a balanced tuner, but the ganged controls felt awful. It was scrapped and the box used for a 40 M transceiver.

Zack Lau KH6CP/1

Internet: zlau@arrl.org "Working" on 24 GHz SSB/CW gear
US Mail: c/o ARRL Lab Operating Interests: 10 GHz CW/SSB/FM
225 Main Street 80/40/20 CW
Newington CT 06111 Station capability: QRP, 1.8 MHz to 10 GHz
modes: CW/SSB/FM/packet
amt/or/baudot
Phone (if you really have to): 203-666-1541

Date: 28 May 93 22:48:48 GMT
From: news-mail-gateway@ucsd.edu
Subject: DX88 vs. GAP vs. R7 etc.
To: info-hams@ucsd.edu

John K7SII writes:

> Recent articles have discussed the GAP, R7, HF6V, G5RV, etc. Does anyone
> have experience with the DX88? I am looking for that "perfect" HF all band
> antenna.

I've used a Hy-Gain DX-88 (all-bands 160m-10m) for over 3 years. It has the 160m add-on kit, which makes an OK (not great but OK) 160m antenna for local QSOs (up to a few hundred miles). It works about as well on 80m as on 160, but I am able to work some DX with it on 80.

On 40 and above, it performs very well. The bandwidths are wider and efficiency

much higher. I worked about 100 countries on it before I put up a beam.

Yesterday

I worked 9M0S on it running a kW on 40. It's nice to be able to precisely tune each band to resonate at your favorite frequency (Extra CW band for me), and to be able to retune 80 from CW to SSB while standing on the ground. I used it in several contests, running full legal limit from an Alpha 87A, and it never complained.

Mail me if you want more info. 73 Mike N6MZ
mikemr@microsoft.com

Date: Fri, 28 May 1993 19:21:48 GMT

From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!usc!
nic.csu.net!eis.CalState.EDU!jherndo@network.UCSD.EDU
Subject: FTP Sites for 2 Line Elements!
To: info-hams@ucsd.edu

I'm looking for ftp sites where I can get two line elements. I've heard AMSAT.ORG had them, except they do not allow anonymous ftp. I currently get my 2 line elements from ARCHIVE.AFIT.AF.MIL. "/pub/space" I was just looking for the one with the MOST satellites to offer. Some offer 180 satellites.. some 150.. etc etc. AFIT (above) is actually VERY nice!

--

John W. Herndon // Internet: jherndo@eis.calstate.edu

Date: 28 May 1993 16:38:01 -0400

From: digex.com!digex.net!not-for-mail@uunet.uu.net
Subject: HTX-202 and pl usage
To: info-hams@ucsd.edu

mark_t._phillips.henr801c@xerox.com writes:

>squelch. When he releases the PTT, the HTX-202 receiver does not
>immediately turn on. The lcd bar-graph indicates the radio is still
>transmitting (tho it is not) and because the receiver has not yet
>resumed, some audio is missed..... typically the first word or two.
>The receive audio doesn't come on for a full second or so when the

The radio most certainly is transmitting during that silent period. That is why it says it is transmittign, by the way.

If you listen to the output of the HTX-202 (not the repeater) you will hear that the PL tone has stopped transmitting after the PTT is released, but the transmitter stays on the air. This allows the PL decoder in some repeaters to shut off, thereby eliminating noise bursts which would otherwise occur.

Naturally, anyone listening to the repeater output would think you had stopped transmitting, leading to the confusion you described. Even though the repeater thought you had stopped transmitting, the HTX was still transmitting, albeit without PL tone.

The first time I heard one of these on the air I wondered who had the "Chicken Burst". Later, I met the amateur, who showed me his new HTX-202.

Some background: I suspect that the HTX-202 is made by ICOM for Radio Shack. If so, I infer from the operation of my ICOM U-16 UHF commercial band portable radio that the HTX-202 operates similarly. Chicken Burst is the name some Motorola-type friends of mine use to describe the ICOM substitute for Motorola's Reverse Burst. Reverse Burst reverses the phase of the PL tone before the transmitter drops off the air to eliminate noise bursts resulting from PL decoder run-on.

So, after all this verbiage, you are just hearing a neat feature of your radio. You are not hearing the receiver come back on for almost one second because the transmitter really is still transmitting; it is just not transmitting PL any longer. Once it drops off the air, the receiver should come on rather quickly.

I'm surprised that this isn't discussed in the manual. I'll have to get an HTX-202 once they discontinue them and get really cheap.

>What's the deal? Is this normal operation for the 202? It makes pl
>operation almost useless because of the slow operation and missed words.

Jeez, I hope you guys don't tailgate each other's transmissions so badly that this one second pause kills the conversation!

--

bote@access.digex.net (John Boteler)
WARNING: You are subject to pre-emption!

Date: Fri, 28 May 1993 22:32:05 GMT
From: swrinde!gatech!concert!news-feed-1.peachnet.edu!umn.edu!chaos.cs.umn.edu!
oxenreid@network.UCSD.EDU
Subject: Need for Radar Gun License RE: FCC Softball Fine
To: info-hams@ucsd.edu

In <1u5i4n\$cqu@ux1.cso.uiuc.edu> rtaylor@ux1.cso.uiuc.edu (Roger Taylor) writes:

>RON@NSULA.EDU (Ron Wright - NSU Computer Center) writes:

>>The message posted yesterday about the FCC levying the fine on the
>>softball fundraiser for using an unlicensed Radar Gun to Clock
>>the pitchers reminded me of a question I once had.

I have not heard of this before, and I would have doubted that the FCC would want to spend a lot of effort on something like this, unless they were causing 'harmfull interference' to some other service.

If the radar was a K band radar, then a licenced Technicain Amateur radio operator can use it under his ham licence. (we have the same allocation under the FCC regs, and it can be fun :-)

>>the answer was that they had been told the License for the VHF/UHF
>>radios in the car would cover it. I repeatedly told them that this
~~~~~ What a lie!

Until circa 1986, the FCC required that all 'police radar' units be individually licenced. Post 1986, the regs were changed du to the massive influx of inexpensive radar units, and licencing became a real headache. Now, your department can apply for a licence, with a \$50.00 fee (that may have change though) and a licence supporting 100 (default) is issued. No more need to put a sticker with the licence on top of the radar unit. The officer need only know where the controll oporating point is (ie the technical end of the arm, so the FCC can go after them). This is also known as a blanket licence.

<stuff deleted>

>>had received it yearly recalibration, or if it's operators had been  
>>certified to use it.

As far as recalibration goes, that would only apply to the frequency part of the regs. The FCC doesn't care if the Radar unit reads correctly, they only care about it as it relates to tramitter specifications.

>since they weren't in THEIR circuit. Virtually NO police department provides  
>certified training by qualified, independent trainers. I have never seen a  
Is there such a thing? KeyWord ~~~~~. The only 'certified training'

I know of is from the Radar OEM, I hardly call this independent.  
>case where the device was properly licensed, tested, or calibrated. Neither

The Minnesota State Patrol (at least in my district) was very good about putting the FCC licence on top of the radar unit (clearly visible), and I have spent many a day taking a tuning fork and placing it on a special frequency counter to measure the osclations, and compairing it to a table (and you had to look it up every time) of acceptiable values. The fork(s) was then used at the start of each shift to check the radar unit. WHILE #\_OF\_TROOPERS >0 DO it again. As for independent trainers, the law can vary from state to state, and so that could be a problem.

<stuff deleted>

A good number of troopers used VASCAR. Which takes all the fun out of a trail. If it takes you X seconds to travel 1/4 mile than you must be traveling Y speed. Unless you and Scotty are working on a new Physics, the ticket holds.

BTW, I worked for a Minnesota Department of Transportations radio shop in South East Minnesota. We serviced MN-DOT, State Patrol, and just about every other State FM two way radio. Radar was just part of the job.

---

Chris Oxenreider (Electronics Technician) |HAM: N0MLD 146.76 (-)  
oxenreid@chaos.cs.umn.edu |#include <std\_disclaimer.h>

---

"It's a small mind who can think of only one way to spell a word" -- M. Twain

---

-----  
Date: 27 May 1993 13:29:34 -0400  
From: swrinde!gatech!howland.reston.ans.net!noc.near.net!jericho.mc.com!  
levine@network.UCSD.EDU  
Subject: Question: Can a novice take the extra test?  
To: info-hams@ucsd.edu

In article <C7p06r.K9y@ucdavis.edu>, ez006683@othello.ucdavis.edu (Daniel D. Todd) writes:

|> lwolfgan@arrl.org (Larry Wolfgang) writes:  
|> :  
|> : The sixth edition of the ARRL/VEC Volunteer Examiner Manual addresses this,  
|> : by saying, "At the team's discretion, elements may be administered out of  
|> : order." (page 55) Unfortunately (at least IMHO) the manual also states,  
|> : "we would still recommend that the examinee must first retake the failed  
|> : element and pass it before proceeding to take a higher examination element."  
|> : (page 51)  
|> :

```
|> When my girlfriend took her no-code she had to take the novice portion  
|> twice. The VE (ARRL) made her pay another testing fee to retake the  
|> element. Is this the VE's decision or does the VEC send down the word on  
|> element retesting fees. Someone else said they had to retake another  
|> element and said they didn't charge him the testing fee twice.  
|>  
|> Dan  
|> --  
|> *-----*  
|> * Daniel D. Todd      Packet: KC6UUD@WA6RDH.#nocal.ca.usa      *  
|> *                      Internet: DDTODD@ucdavis.edu          *  
|> *                      Snail Mail: 1750 Hanover #102           *  
|> *                           Davis CA 95616                  *  
|> *-----*  
|> *      I do not speak for the University of California....      *  
|> *      and it sure as hell doesn't speak for me!!            *  
|> *-----*
```

It is the policy of most VECs to charge for re-testing of the same element. However, the one exception for Novice elements. The information here relates to the ARRL VEC, others might be different.

- 1) If a candidate comes to take Novice written and/or 5wpm, there is NO CHARGE. Furthermore, there is NO CHARGE to re-take Novice written (2) or 5wpm  
(1a) any number of times.
- 2) If after passing element 2, the candidate wants to take Tech written  
(3a) the candidate must pay \$5.60. If the candidate fails 3a and wants to re-take 3a again, he must pay another \$5.60 etc...
- 3) The one exception RIGHT NOW is that if a no-code tech comes and wants to take 5wpm to upgrade to tech+ (btw I hate that designator), he must pay \$5.60 even though he is just taking a Novice element. This will change on July 1 for ARRL VE teams and there will be NO CHARGE for this either.

Bottom line, your girlfriend should NOT have had to pay \$5.60 to re-take the Novice written. If she passed Tech written on the first attempt, then the total cost should have been \$5.60 (for the Tech written 3a). If she paid more, contact the VE Team and tell them to learn the rules by calling the ARRL VEC Office at (800)927-7583. If you have trouble with the team, call them yourself to inquire about a refund.

73 Bob KD1GG

---

Date: 28 May 1993 17:06:45 -0400

From: digex.com!digex.net!not-for-mail@uunet.uu.net  
Subject: Radio shack 2mtr ht, DTMF tone prob  
To: info-hams@ucsd.edu

In article <1787700025@trsvax> rpo@trsvax.tandy.com writes:  
>Tell him to turn on the Touch-Tone Auto-Reply feature. This will

I certainly am pleased to see that the HTX-202 gives the option to disable that darned Touch Tone hang-time.

About the name of that function: does the Auto-Reply feature send a Touch Tone "C" at the end of each transmission when it is turned on? I recently heard a radio on our repeater which did this, and the name of this feature seems to describe it.

Please advise.

--

bote@access.digex.net (John Boteler)  
WARNING: You are subject to pre-emption!

---

Date: Fri, 28 May 1993 22:48:37 GMT  
From: sdd.hp.com!col.hp.com!news.dtc.hp.com!srgenprp!glenne@network.UCSD.EDU  
Subject: VCO design questions  
To: info-hams@ucsd.edu

Alan Bloom (alanb@sri.hp.com) wrote:

: : 3) Most of the VCO designs use varactors in a back-to-back setup,  
:  
: In a varactor, the capacitance changes as a function of voltage.  
: If the peak amplitude of the RF voltage is greater than the DC  
: reverse bias, the varactor will be forward-biased and conduct. Using  
: two varactors in series reduces the RF voltage drop in each to half.  
: Also, the varactor Q improves with higher reverse bias. A large RF  
: signal can cause the reverse bias to be near zero at the negative peak  
: of the waveform, which lowers the average Q. Lower Q means higher  
: phase noise.

Another reason for the back-back approach is that it is symmetrical which can reduce even order distortion products produced by the non-linear V/C response of each individual diode.

Back to back (series) diodes generally provide half the total capacitance as well as half the capitanse change so a given diode type may have to be operated nearer DC in order to get a given tuning range and sensitivity. However, even if this happens the symmetry may improve oscillator performance.

Glenn Elmore n6gn

N6GN @ K3MC  
amateur IP: glenn@SantaRosa.ampr.org  
Internet: glenne@sri.hp.com

---

Date: Fri, 28 May 1993 20:09:45 GMT  
From: pacbell.com!att-out!cbnewsj!dquaglia@network.UCSD.EDU  
Subject: What is the status of DOVE (D0-17) ?  
To: info-hams@ucsd.edu

What is the current status of the DOVE amateur satellite?  
I haven't seen any news of it lately in the AMSAT news bulletins  
and I haven't been able to hear the signal on 145.825 Mhz.

Is it still operational, waiting to be fixed (if so, when? what broke?)  
or is it completely dead?

Replies to dquaglia@attmail.com or rec.radio.amateur.misc

Douglas Quaglia KA2UPW  
dquaglia@attmail.com

---

Date: Fri, 28 May 1993 23:02:03 GMT  
From: spsgate!mogate!newsgate!sauron!smith@uunet.uu.net  
To: info-hams@ucsd.edu

References <1993May23.025422.2548@n5ial.mythical.com>,  
<1993May23.154332.14955@newsgate.sps.mot.com>, <1tomliINNk8a@crcnis1.unl.edu>  
Subject : Re: Signal report etiquette

>You raise another good point... if all you are getting is a 5 second  
>QSO, why bother to turn the rig on in the first place? You call that  
>ham radio???

>Gary

>Gary McDuffie, Sr. // ---o-----\./-----o---

It was a few minutes before the ARRL DX CW contest and this guy was just warming up, besides I prefer 5 second QSO's when there's other people waiting to work the DX. It is somewhat anti-social to send your name, QTH, rig, weather and how you feel when the DXpedition has gone somewhere to maximise the QSO rate for the deserving - one should listen, listen some more, then work the DX in the manner he prefers whether that be a contest style qso or ragchew mode.

A classic example of Liddish behaviour was demonstrated by a W6T\*\* this morning on 10mhz - 9M0S, Spratley was working contest style when this W6T\*\* works him and asks 9M0S for his QTH & name, upon being told he then proceeds to wax lyrical about how its been 25 years and he's never worked spratley before etc.

Then to cap it all this W6T\*\* is heard 10 minutes later in the pile still calling 9M0S !!! maybe he forgot to get his weather report but its obvious that had he listened enough he would have realised (maybe) that names/qth were not the thing the guy on spratley wanted to hear.

Trevor G3WQO AB5EU still exiled in Texas.

-----

End of Info-Hams Digest V93 #656  
\*\*\*\*\*